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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,073	11/27/2001	Weitong Shi	LC-425 US	8758

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LOCTITE CORPORATION
Legal Department
1001 Trout Brook Crossing
Rocky Hill, CT 06067

EXAMINER

BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,073

Applicant(s)

SHI ET AL.

Examiner

Susan W Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1, 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1: lines 5-6, it is not clear what is meant by "R is an n-valent carbon-linked organic group". Does applicant intend to set forth that R is a chain of carbon atoms linked to carbon atoms or that a carbon atom in the R group is linked to the -O- in the vinyl ether group?

Claim 6: improper Markush language appears in this claim. It is suggested that the word "and" in line 4 and first occurrence in line 14 be deleted and in line 5 be changed to "or". It is suggested that the use of commas and semi-colons be reviewed.

Claim 8: A selection (iii) is missing from the Markush Group. It is not clear what the difference is between the copolymers recited in (ii) and the copolymers recited in (iv) or (v). Copolymers of an alkyl ester of acrylic acid are included in (ii) and in (iv). Copolymers of alkoxy esters of acrylic acid are included in (ii) and in (v).

Claim 11: line 6, "ethylene-propylene monomer" needs correction because ethylene-propylene is not a "monomer".

Claim 14: In lines 4-5, the phrase "selected from the group of" should be changed to read "selected from the group consisting of". In line 10, it is not clear what is intended by "iron arene salt complex catalyst" because lines 2-3 recite the cationic photoinitiator component. Does applicant intend to recite an iron arene salt or an iron arene complex as the cationic photoinitiator?

Claim 16: line 3, the word "and" should be deleted so that the Markush group ends with "and mixtures thereof".

Claim 18: it is suggested that a comma should be inserted between "polymers" and "inorganic".

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Claims 24 and 25: It is suggested that the first occurrence of abbreviations "IR" and "UV" be replaced with the abbreviated word, such as "infrared (IR)".

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9, 10, 13 and 17-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-264911. J '911 discloses compositions useful for adhesives comprising compounds (A), vinyl ether monomers as (B) and cationic photopolymerization initiators (C). Compound (A) can be the reaction product of a (methano)cyclohexene dicarboxylic acid and HO-terminated polybutadiene. The tensile strength and elongation at break of the polybutadiene is not mentioned in the Abstract, but would be expected to meet the claimed requirements in the absence of evidence to the contrary. Thus, those compositions disclosed by J '911 wherein the polybutadiene has the required tensile strength and elongation at break anticipate the instantly claimed compositions.

Alternatively, it would have been obvious to one skilled in the art to determine the tensile strength and

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elongation at break of the (methano) cyclohexene polybutadiene component needed to provide the adhesive properties desired for a particular application, in the absence of evidence to the contrary.

Claims 1-6, 9, 10, 13 and 17-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 07228842. J '842 discloses adhesive compositions comprising a vinyl ether compound, a polyester elastomer and a photo-cationic initiator. The tensile strength and elongation at break of the polyester elastomer is not mentioned in the Abstract, but would be expected to meet the claimed requirements in the absence of evidence to the contrary. Thus, those compositions disclosed by J '842 wherein the polyester elastomer has the required tensile strength and elongation at break anticipate the instantly claimed compositions. Alternatively, it would have been obvious to one skilled in the art to determine the tensile strength and elongation at break of the polyester elastomer component needed to provide the adhesive properties desired for a particular application, in the absence of evidence to the contrary.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over J '911 or J '842 in view of the Decker article "High-Speed Curing by Laser Irradiation". Each of J '911 and J '842 discloses radiation curable compositions comprising a vinyl ether compound and a cationic initiator. Decker teaches that vinyl ether compounds are rapidly cured by laser irradiation in the presence of triarylsulfonium salts or diaryliodonium salts. It would have been obvious to one skilled in the art to employ triarylsulfonium salts or diaryliodonium salts as photo-cationic initiators for polymerizing the vinyl ether compounds in the adhesive compositions taught by J '911 or J '842. Each of J'911 and J'842 provides motivation by requiring a cationic photoinitiator. Decker provides motivation to use onium salts by teaching that vinyl ether-functionalized compounds are rapidly cured in their presence.

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Claims 1-9, 11, 13-19 and 21-29 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Nakasuga et al (6,376,070). Nakasuga et al disclose a PSA that includes a high molecular weight polymer (A), preferably an acrylic copolymer, an epoxy compound and a photoinitiator. A vinyl ether compound is taught as a preferred additive (column 6). Cationic photoinitiators are preferred (column 6, lines 57-59, and column 7, lines 6-12). Rubber thickeners, such as acrylic, epichlorohydrin, isoprene or butyl rubbers, can be added (column 9, lines 45-46). See columns 3-5. The tensile strength and elongation at break of the high molecular weight polymer or of the rubber thickeners are not mentioned, but would be expected to meet the claimed requirements in the absence of evidence to the contrary. Thus, those compositions disclosed by Nakasuga et al wherein the vinyl ether and cationic photoinitiator are included and the high molecular weight polymer or the rubber thickener has the required tensile strength and elongation at break anticipate the instantly claimed compositions. Alternatively, it would have been obvious to one skilled in the art to determine the tensile strength and elongation at break of the polyester elastomer component needed to provide the adhesive properties desired for a particular application, in the absence of evidence to the contrary.

Claims 1-7, 11, 13, 17 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinz et al (4,320,188). Heinz et al disclose photopolymerizable compositions comprising an elastomeric styrene-diene block polymer, polymerizable monomers and photopolymerization initiators. The polymerizable monomers include (meth)acrylate, vinyl ester and/or vinyl ether monomers and the initiators can be conventional photoinitiator systems (column 4, line 58, to column 5, line 25). The tensile strength and elongation at break of the styrene-diene elastomer is not mentioned, but would be expected to meet the claimed requirements in the absence of evidence to the contrary.

It would have been obvious to one skilled in the art to employ vinyl ether monomers and a cationic initiator, such as an onium salt initiator, in the compositions disclosed by Heinz et al. One of

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ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of success since Heinz et al teach that vinyl ether monomers and conventional photoinitiators can be used with the elastomeric styrene-diene block polymer to obtain photo-curable adhesives. It would have been obvious to one skilled in the art to determine the tensile strength and elongation at break of the styrene-diene elastomeric block polymer component needed to provide the adhesive properties desired for a particular application, in the absence of evidence to the contrary.

Allowable Subject Matter

Claim 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior art does not teach compositions comprising a vinyl ether monomer, cationic photoinitiator and millable elastomeric polyurethane having the recited tensile strength and elongation at break.

Conclusion

The following references are cited as art of interest. JP 05214298 discloses pressure-sensitive adhesive compositions comprising copolymers (A), vinyl ether compounds (B) and compounds having at least two radical-polymerizable groups (C) that provide a layer excellent in pressure sensitive adhesiveness before irradiation and rubber elasticity, extensibility and reduced adhesive power after irradiation. An elastomeric polymer is not mentioned in the Abstract. Kuroda et al (6,608,148) disclose hot melt adhesives comprising a cationically polymerizable compound, a cationic photoinitiator, a phthalate diester compound and an optional elastomeric thermoplastic resin. Lorenz et al (5,992,314) disclose UV curable adhesives comprising cationically polymerizable monomers, including vinyl ethers,

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and photoinitiators, including onium salt photoinitiators. Binder components such as waxes and thermoplastic resins can be added. See columns 9-11, 15-18 and 19, lines 21-39.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 703 308 0040. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703 308 2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.



Susan W Berman
Primary Examiner
Art Unit 1711

SB
September 28, 2003